

# Notice of Allowability

Application No.

09/288,478

Examiner

Edith M. Chang

Applicant(s)

KAPOOR ET AL.

Art Unit

2637

psw

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on Aug 10 2005.
2. ☒ The allowed claim(s) is/are 1-46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with James A. Finder on October 12, 2005.
3. The application has been amended as follows:

In the claims:

Claims 1, 5, 24 & 28, line 1: "demodulated output" has been changed to "demodulated output including a demodulated digital bit stream".

Claim 14, line 2: "an output" has been changed to "the demodulated output".

Claim 16, line 2: "based on" has been changed to "based on the predefined test for".

Claims 18 & 41, line 2: "DPS" has been changed to "Discrete Prolate Spheroidal (DPS)".

Claim 26, line 2: "a selected output" has been changed to "the selected output".

Claim 35, line 2: "of decision" has been changed to "of performing decision".

Claim 37, lines 1-2: "into a demodulated digital bit stream" has been changed to "into the demodulated digital bit stream".

Claim 39, line 2: "an output based on" has been changed to "the output based on the predefined test for".

Claim 42, line 2: "the time domain" has been changed to "a time domain".

4. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a receiver providing a demodulated output from a received discrete multi-tone modulated input signal and its method as a whole, the combination of elements and features, which includes two data paths coupled to receive the input signal from a time domain equalizer; a window stage of the second data path suppressing side lobes of the frequency response from a first stage of the first data path wherein the first stage discrete Fourier Transforming the input signal to provide the frequency response outputted to the window stage and a frequency domain equalizer in the first data path; and a logic stage selecting an output from the first or the second data path based on a predefined test; or the input signal from the time domain equalizer inputting to a first stage discrete Fourier Transforming of a first path and a time domain window of a second path which is coupled to a second stage discrete Fourier Transforming in the second path as recite in the claims.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Helard et al. (US Patent 6459744) describes a device and its method including a fine synchronization step, wherein the signal transmission channel impulse response is estimated on the basis of reference coefficients bearing reference carrier frequencies in the time-frequency space in FIG.7.

Kappor (US Patent 6,396,886) in FIG.3 describes a discrete multi-tone communications system 2 including a receiver 31 comprising a window circuit 34, an FFT demodulator 36, and a bit generator 38, a time-domain equalizer 33 which is capable of (i) compensating for the non-ideal impulse response of a transmission channel; (ii) compensating for additive colored noise introduced by the transmission channel; and/or (iii) preventing the introduction of noise coloration by the time domain equalizer.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang  
October 19, 2005

  
**KHAI TRAN**  
**PRIMARY EXAMINER**